NASA Aviation Safety Program Annual Technical Conference
Agenda at a Glance

Tuesday, October 21, 2008: Inspiration

Time	*Location*	*Session*
All day	Ballroom Foyer	Registration
1:00 – 6:00	Event Center	Plenary Inspiration Session
6:00 – 8:00	Atrium	Welcome Reception
6:00 – 8:00	Event Center	Poster Session IRAC (Part 1) & IVHM

Wednesday, October 22, 2008: Current Results & Technical Interchange

Time	*Location*	*Sessions*			
8:00 – 12:00	Break-Out Rooms (see Detailed Agenda)	AAD @7:45 Presentations & Poster Session	IIFD Presentations & Poster Session	IRAC Panel Discussions	IVHM @7:45 Panel Discussion & Presentations
12:00 – 1:30	Ballroom X	Integration Lunch			
1:30 – 5:00	Break-Out Rooms (see Detailed Agenda)	AAD Presentations & Poster Session	IIFD Presentations & Poster Session	IRAC Panel Discussions	IVHM Presentations
5:00 – 7:00	Break-Out Rooms (see Detailed Agenda		IIFD Evening Poster Session	IRAC Poster Session (Part 2)	

Thursday, October 23, 2008: Technical Interchange & Moving Forward

Time	*Location*	*Sessions*			
8:00 – 11:00	Break-Out Rooms (see Detailed Agenda)	AAD @7:45 Presentations	IIFD @9:00 Industry Working Group	IRAC Panel Discussions	IVHM Presentations
11:00 – 12:00	Ballroom B	Panel Discussion: NASA Partnering Methods			

NASA Aviation Safety Program Annual Technical Conference
Detailed Agenda

October 21, 2008: Registration

Time	*Location*
8:00 – 5:00	Ballroom Foyer

October 21, 2008: Inspiration
PLENARY SESSION

Time	*Location*	*Speaker*	*Title/Organization*	*Presentation*
1:00 – 1:15	Event Center	Amy Pritchett	Director, NASA Aviation Safety Program	Kick-off & Welcome
1:15 – 2:45	Event Center	Dennis Fitch	Captain, United Airlines, retired	Aviation Safety Perspectives
2:45 – 3:15	Event Center	Douglas Rohn	Deputy Director, NASA Aviation Safety Program	Q&A with Captain Fitch
3:15 – 3:30	**Atrium**	**Break**		
3:30 – 5:00	Event Center	Amy Pritchett	Director, NASA Aviation Safety Program	Aviation Safety Today & Looking to the Future
5:00 – 5:45	Event Center	Jaiwon Shin	Associate Administrator, NASA Aeronautics Research Mission Directorate	NASA Welcome
5:45 – 6:00	Event Center	Amy Pritchett	Director, NASA Aviation Safety Program	Instructions for Day 2

October 21, 2008: Reception

Time	*Location*	*Speaker*	*Title/Organization*	*Presentation*
6:00 – 8:00	**Atrium**	**Welcome Reception**		
6:00 – 8:00	Event Center	Poster session, IRAC (Part 1) & IVHM		

October 22, 2008: Current Results & Technical Interchange
PARALLEL SESSION
Aircraft Aging & Durability Project (AAD)

Time	*Location*	*Speaker*	*Title/Organization*	*Presentation*
7:45 – 8:00	Aspen	Rick Young	AAD Principal Investigator, NASA Langley Research Center	Intro to AAD Project Sessions
Topic: Durability of Superalloy Engine Disks and Hot Sensors				
8:00 – 8:30	Aspen	John Gayda	NASA Glenn Research Center	Fatigue Behavior and Life Prediction for LSHR Disk Alloy at 1300°F
8:30 – 9:00	Aspen	Leah Underwood	GE Aircraft Engines	Ductile Coatings for Corrosion Resistance of Disk Alloy ME3
9:00 – 9:30	Aspen	Otto Gregory	University of Rhode Island	Nanocomposites Based on Semiconducting Oxides for Thermoelectric Device Applications
9:30 – 10:30	**Event Center**	**Poster Session & Break**		
Topic: Engine Fan Containment				
10:30 – 11:00	Aspen	Gary Roberts	NASA Glenn Research Center	Damage Evolution in Triaxial Braided Composites Under Quasistatic and Impact Loads
11:00 – 11:30	Aspen	Amine Benzerga	Texas A&M	A Computational Framework for Analysis of Behavior and Failure Modes in Advanced Composites for Fan Blade Containment Cases
11:30 – 12:00	Aspen	Don Roth	NASA Glenn Research Center	Ultrasonic Phased Array Simulations of Critical Components at NASA
12:00 – 1:30	**Ballroom X**	**Lunch**		
Topic: Composite Structures				
1:30 – 2:00	Aspen	Kevin O'Brien	NASA Langley Research Center	Development of a Delamination Fatigue Methodology for Rotorcraft
2:00 – 2:30	Aspen	Qingda Yang	University of Miami	Computational Methods for Interacting Matrix and

				Delamination Cracks
2:30 – 3:30	**Event Center**	**Poster Session & Break**		
Topic: Bonded Structures				
3:30 – 4:00	Aspen	Jeff Hinkley	NASA Langley Research Center	Molecular Dynamics Calculations of Moisture and Temperature Effects on Epoxy Networks
4:00 – 4:30	Aspen	Andrea Hoyt Haight	Adherent Technologies	Primers for Chemical Coupling to Epoxy Laminates
4:30 – 5:00	Aspen	Cliff Lissenden	Pennsylvania State University	Guided wave UT NDE for Bonds

October 22, 2008: Current Results & Technical Interchange
PARALLEL SESSION
Integrated Intelligent Flight Deck Technologies Project (IIFD)

Time	*Location*	*Speaker*	*Title/Organization*	*Presentation*
Topic: IIFD Present and Future				
8:15-8:45	Conifer	Steve Young	IIFD Principal Investigator, NASA Langley Research Center	IIFD Project Overview and Track Overview
Topic: IIFD Flight Deck System Research – Design, Operator Performance, and Enabling Avionics (I)				
8:45-9:10	Conifer	Eric Johnson	Georgia Institute of Technology	Designing Human-Automation Interaction Through Computational Modeling of Cognition and the Dynamic Flight Environment
9:10-9:35	Conifer	Paul Schutte	NASA Langley Research Center	Using a Car-like Flight Control System in Aircraft: Improving Safety and Ease of Use by Tapping Into the User's Experience Base
9:35-10:00	Conifer	Maarten Uijt de Haag	Ohio University	External Hazard Monitoring and Integrated Alerting and Notification Avionics Issues
10:00-10:45	**Event Center**	**Poster Session & Break**		
10:45-11:10	Conifer	Paul Picciano	Aptima, Inc.	Advanced Computational Models for the Design of Automated Systems
11:10-11:35	Conifer	R. Key Dismukes	NASA Ames Research Center	Checklists and Monitoring: Why Two Vital Defenses Against Equipment Failures and Errors Sometimes Fail
11:35-12:00	Conifer	Mark Potapczuk	NASA Glenn Research Center	Engine Icing: The Flight Hazard Due to Ice Crystal Particles
12:00 – 1:30	**Ballroom X**	**Lunch**		

Topic: IIFD Flight Deck System Research – Design, Operator Performance, and Enabling Avionics (II)				
1:30-1:55	Conifer	Lance Sherry	George Mason University	Automation Interaction Design and Evaluation Methods
1:55-2:20	Conifer	Stephen Casner	NASA Ames Research Center	Using Advanced Automation: Incongruities Between Beliefs and Performance
2:20-2:45	Conifer	Leanne West	Georgia Tech Research Institute	Forward Looking Interferometric Sensing of Atmospheric Hazards - Modeling and Field Test Results
2:45-3:30	**Event Center**	**Poster Session & Break**		
3:30-4:00	Conifer	Nadine Sarter	University of Michigan	Proactive System Design and Evaluation: Supporting Pilot-Automation Interaction through Empirical and Modeling Analyses
4:00-4:30	Conifer	Jason McCarley and Chris Wickens	University of Illinois and Alion Science and Technology	Control of Attention: Modeling the Effects of Stimulus Characteristics, Task Demands, and Individual Differences
4:30-5:00	Conifer	Yan Zhang	University of Oklahoma	Airborne Phased Array Radar for Microphysics-Based Hazard Detection and Monitoring
5:00-7:00	**TBD**	**Evening Poster Session and Social Event**		

October 22, 2008: Current Results & Technical Interchange
PARALLEL SESSION
Integrated Resilient Aircraft Control Project (IRAC)

Time	*Location*	*Speaker/ Panelist*	*Title/Organization*	*Presentation*
8:00 – 8:30	Ballroom A	Kalmanje Krishnakumar	IRAC Principal Investigator, NASA Ames Research Center	IRAC Overview
8:30 – 9:30	Ballroom A	**Panel Discussion: Metrics-Driven Adaptive Control** **Moderator: John Bosworth, NASA Dryden Research Center** **Moderator: Joe Pahle, NASA Dryden Research Center**		
		Eric Johnson	Georgia Institute of Technology	Flight Validation of Metrics-Based Adaptive Control Methods
		Khalid Al-Ali	Carnegie Mellon University West	Experimental Validation of Metrics-Driven Enhanced-Safety (ME) Adaptive Control
		Naira Hovakimyan	University of Illinois at Urbana-Champaign	Flight Validation of Metrics Driven Adaptive Control
9:30 – 10:00	**Event Center**	**Break**		
10:00 – 11:00	Ballroom A	**Panel Discussion: Flight Planning** **Moderator: John Kaneshige, NASA Ames Research Center** **Moderator: David Smith, NASA Ames Research Center**		
		Ella Atkins	University of Michigan	A Damage Resilient Flight Planning and Guidance System for Safe, Collaborative Emergency Planning Management
		Nesrin Sarigul-Klijn	University of California at Davis	Dynamically Constrained Adaptive Flight Path Planning Using Predictive Algorithms
		Panagiotis Tsiotras	Georgia Institute of Technology	Advanced Methods for Intelligent Flight Guidance and Planning in Support of Pilot Decision Making
11:00 – 12:00	Ballroom A	**Panel Discussion: Flight Envelope** **Moderator: Patrick Murphy, NASA Langley Research Center** **Moderator: John Burken, NASA Dryden Research Center**		

		James Urnes	Boeing, St. Louis	Dynamic Flight Envelope Assessment and Prediction
		Gary Balas	University of Minnesota	Fault Diagnosis and Prognosis and Reliable Flight Envelope Assessment
		Mario Perhinschi	West Virginia University	Integrated System for Immunity-Based Failure Detection, Identification, and Evaluation
12:00 – 1:30	**Ballroom X**	**Lunch**		
1:30 – 2:20	Ballroom A	**Panel Discussion: Fast Engine Response** **Moderator: Ten-Huei Guo, NASA Glenn Research Center** **Moderator: Jonathan Litt, NASA Glenn Research Center**		
		Bruce Wood	United Technologies Research Center	Fast Response Engine Controller Mission Adaptive Engine Controller
		Walt Merrill	Scientific Monitoring, Inc.	Fast Response Engine Controller Design
2:20 – 3:10	Ballroom A	**Panel Discussion: Structural Modeling** **Moderator: T. Krishnamurthy, NASA Langley Research Center** **Moderator: Edward Glaessgen, NASA Langley Research Center**		
		Mayuresh Patil	Virginia Polytechnic Institute and State University	In-Flight Load Constraint Estimation and Residual Life Prediction for Aircraft with Discrete Source Damage
		Anthony Ingraffea	Cornell University	Computational Methods in Physics-Based Modeling of Damaged Flight Structures
3:10 – 3:30	**Event Center**	**Break**		
3:30 – 4:30	Ballroom A	**Panel Discussion: Adaptive Control - I** **Moderator: Suresh Joshi, NASA Langley Research Center** **Moderator: Sean Kenny, NASA Langley Research Center**		
		S. Balakrishnan	Missouri University of Science and Technology	Adaptive Control with Stability Guarantee
		Gang Tao	University of Virginia	Adaptive Control Techniques for Systems Under Structural

				Uncertainties with Aircraft Control Applications
		Dennis Bernstein	University of Michigan	Minimal Modeling Direct Digital Adaptive Flight Control
5:00 – 7:00	**TBD**	**Poster Session (Part II)**		

October 22, 2008: Current Results & Technical Interchange
PARALLEL SESSION
Integrated Vehicle Health Management Project (IVHM)

Time	*Location*	*Speaker/ Panelist*	*Title/Organization*	*Presentation*
7:45 – 8:00	Ballroom B	Ashok Srivastava	IVHM Principal Investigator, NASA Ames Research Center	IVHM Overview
Topic: Mitigation and Integrity Assurance				
8:00 – 8:15	Ballroom B	Eric Cooper	NASA Ames Research Center	Intro to Mitigation and Integrity Assurance
8:15 – 9:45	Ballroom B	**Panel Discussion: Software Health Management Moderator: Paul Miner, NASA Langley Research Center**		
		John Rushby	SRI International	
		Gabor Karsai	Vanderbilt University	
		Johann Schumann	Universities Space Research Association	
		Lee Pike	Galois	
		Panagiotis (Pete) Manolios	Northeastern University	
		Grigore Rosu	University of Illinois Urbana-Champaign	
9:45 – 10:00	Ballroom B	Steven Gray	Old Dominion University	Design and Analysis of Recoverable Flight Control Systems for Harsh Environments
10:00 – 10:30	**Event Center**	**Break**		
Topic: Prognosis				
10:30 – 10:45	Ballroom B	Scott Poll	NASA Ames Research Center	Intro to Prognosis
10:45 – 11:00	Ballroom B	Aditi Chattopadhyay	Arizona State University	An Integrated Vehicle Health Management Approach to Heterogeneous Structural Systems
11:00-11:15	Ballroom B	Pradeep Lall	Auburn University	Development of Early Indicators for Failure Prognosis of Electronics

11:15-11:30	Ballroom B	Carl Byington	Impact Technologies LLC	Development of Model-based Diagnostics/ Prognostics for Electromechanical Actuators with a Hardware-in-the-Loop Validation Platform
11:30-11:45	Ballroom B	Carl Byington	Impact Technologies LLC	A Novel Methodology for Prognostics, Uncertainty Representation and Uncertainty Management
11:45-12:00	Ballroom B	Yongming Liu	Clarkson University	Validation and Uncertainty Management of Prognostic Algorithms
12:00 – 1:30	**Ballroom X**	**Lunch**		
Topic: Diagnosis				
1:30 – 1:45	Ballroom B	Rick Ross	NASA Langley Research Center	Intro to Diagnosis
1:45 – 2:00	Ballroom B	Jiawei Han	University of Illinois at Urbana-Champaign	Mining and Understanding Anomalous Aviation Events: An Event Cube Approach
2:00 – 2:15	Ballroom B	Asok Ray	Pennsylvania State University	Health State Assessment and Failure Prognosis of Integrated Aircraft Propulsion
2:15 – 2:30	Ballroom B	Dimitry Gorinevsky	Stanford University	Optimal Estimation of Hybrid System States for Diagnosis of Aircraft Systems
2:30 – 2:45	Ballroom B	Fuh-Gwo Yuan	North Carolina State University	Image Segmentation of Damage in Structural Health Monitoring
2:45 – 3:00	Ballroom B	Fu-Kuo Chang	Stanford University	An Integrated Passive-Active Interactive Diagnostic Technique for Condition Monitoring and Damage Detection for IVHM
3:00 – 3:30	**Event Center**	**Break**		
3:30 – 3:45	Ballroom B	Neil Kunst	Ridgetop Group	Develop and Validate Fault Detection and Diagnostic Methods for Switch Mode Power

				Supplies Used in Avionic Control Systems Employing Electro-Mechanical Actuators
3:45 – 4:00	Ballroom B	Gautam Biswas	Vanderbilt University	Online Statistical Methods for Robust State Estimation, Anomaly Detection, and Degradation Analysis in Complex, Embedded Systems
Topic: Research Test and Integration and Systems Analysis				
4:00-4:15	Ballroom B	Robert Mah	NASA Ames Research Center	Intro to Research Test and Integration
4:15-4:30	Ballroom B	Dimitry Gorinevsky	Mitek Analytics LLC	Systems Architecture for Integration of Vehicle Health Management Research
4:30-4:45	Ballroom B	Mike Venti	NASA Dryden Research Center	IVHM Project's Research Test and Integration Plan
4:45-5:00	Ballroom B	Mary Reveley	NASA Glenn Research Center	Systems Analysis

October 23, 2008: Technical Interchange & Moving Forward
PARALLEL SESSION
Aircraft Aging & Durability Project (AAD)

Time	*Location*	*Speaker*	*Title/Organization*	*Presentation*
7:45 – 8:00	Aspen	Rick Young	AAD Principal Investigator, NASA Langley Research Center	Intro to AAD Project Sessions
Topic: Metallic and Integral Structures				
8:00 – 8:30	Aspen	Buzz Wincheski	NASA Langley Research Center	Aircraft Wing Spar NDE
8:30 – 9:00	Aspen	Ed Glaessgen	NASA Langley Research Center	Overview of the Damage Science Project
9:00 – 9:30	Aspen	Steve Smith	NASA Langley Research Center	3D FEM Solutions for Integral Metallic and Hybrid Laminate Materials
9:30 – 10:00	**Foyer**	**Break**		
Topic: Wiring				
10:00 – 10:30	Aspen	Stefan Schuet	NASA Ames Research Center	Understanding Wire Chafing: Model Development and Optimal Diagnostics Using TDR
10:30 – 11:00	Aspen	Nicola Bowler	Iowa State University	Dielectric and Thermal Analysis Properties of PTFE Wiring Insulation for Nondestructive Evaluation and Lifetime Prediction

October 23, 2008: Technical Interchange & Moving Forward
PARALLEL SESSION
Integrated Intelligent Flight Deck Technologies Project (IIFD)

Time	*Location*	*Speaker*	*Title/Organization*	*Presentation*
Topic: Industry/NASA Flight Deck Research Working Group Meeting *(open to all)*				
9:00-11:00	Conifer	Barbara Burian	IIFD Project Scientist, NASA Ames Research Center	Presentations TBD.

October 23, 2008: Technical Interchange & Moving Forward
PARALLEL SESSION
Integrated Resilient Aircraft Control Project (IRAC)

Time	*Location*	*Speaker/ Panelist*	*Title/Organization*	*Presentation*
8:00 – 9:00	Ballroom A	**Panel Discussion: Software V&V** **Moderator: David Cox, NASA Langley Research Center** **Moderator: Stephen Jacklin, NASA Ames Research Center**		
		John Rushby	SRI International	Formally Supported Safety Cases for Adaptive Systems
		Ashish Tiwari	SRI International	Symbolic Verification of Adaptive Systems
9:00 – 9:30	Ballroom A	**Panel Discussion: Adaptive Control II** **Moderator: Nhan Nguyen, NASA Ames Research Center** **Moderator: Irene Gregory, NASA Langley Research Center**		
		Eugene Lavretsky	Boeing, Huntington Beach, CA	Robust Composite Adaptive Control for Piloted Aircraft
		Luis Crespo	National Institute Of Aerospace	Fault Diagnosis and Prognosis and Reliable Flight Envelope Assessment
		Subhabrata Ganguli	Honeywell International	Verifiable Adaptive Control: Analysis and Design
		Naira Hovakimyan	University of Illinois at Urbana-Champaign	Adaptive Control with a priori Guaranteed Performance Bounds and Robustness/Stability Margins
9:30 – 10:00	**Foyer**	**Break**		
10:00 – 11:00		**Panel Discussion: Adaptive Control II (continued)**		
11:00 – 12:00	Ballroom A	**Panel Discussion: Adaptive Systems V&V** **Moderator: David Cox, NASA Langley Research Center** **Moderator: Stephen Jacklin, NASA Ames Research Center**		
		Gary Balas	University of Minnesota	Analytical Validation Tools for Safety Critical Systems
		Anthony Calise	Georgia Institute of Technology	Development of LMI Analysis Tools for Learning Algorithms

***At 11:00, those who are interested may leave to attend the session on 'NASA Partnering Methods'.**

October 23, 2008: Technical Interchange & Moving Forward
PARALLEL SESSION
Integrated Vehicle Health Management Project (IVHM)

Time	*Location*	*Speaker*	*Title/Organization*	*Presentation*
Topic: Detection				
8:00 – 8:15	Ballroom B	John Lekki	NASA Glenn Research Center	Intro to Detection
8:15 – 8:30	Ballroom B	Jaideep Srivastava	University of Minnesota	Detecting Anomalies from Numeric and Textual Data Using Data Mining
8:30 – 8:45	Ballroom B	Liang-Yu Chen	Ohio Aerospace Institute	Packaging Technology for High Temperature SiC Electronics and Sensors
8:45 – 9:00	Ballroom B	Jerzy Sawicki	Cleveland State University	Smart Structural Health Monitoring of Rotating Components Using Active Magnetic Force Actuators
9:00 – 9:15	Ballroom B	Wes Lawrence	Old Dominion University	The Development of Adaptive EM Hazards Sensor Network for the Assessment of the Aircraft Hazard Environment for Avionics
9:15 – 9:30	Ballroom B	Fu-Kuo Chang	Stanford University	Integrated Large-Area Sensor/Actuator Network (ILASAN) Technology for Structural Health Monitoring
9:30 – 9:50	**Foyer**	**Break**		
9:50 - 10:05	Ballroom B	Vladimir Kochergin	Luna Innovations Inc.	Active All-Fiber-Optic Acoustic Airframe Structural Health Monitoring System
10:05 – 10:20	Ballroom B	George Zhao	Intelligent Automation, Inc.	Wireless Ultrasonic Transducer Network for Airframe Structural Health Management

October 23, 2008: Technical Interchange & Moving Forward
PARALLEL SESSION
Partnership Discussion

Time	*Location*	*Panelists*	*Title/Organization*	*Presentation*
11:00 – 12:00	Ballroom B	**Panel Discussion: "NASA Partnering Methods - What Works Best in NRAs, SBIRs, & SAAs"**		
		Amy Pritchett	Director, NASA Aviation Safety Program	Academic Viewpoint
		Douglas Rohn	Deputy Director, NASA Aviation Safety Program	NASA Source Selection Official
		TBD		NASA Researcher
		TBD		University NRA Awardee
		TBD		SBIR Awardee
		TBD		Industrial Partner
12:00	**Conference Adjourns**			